

CLAIMS

1. A conveyor idler including a drum having an outer surface and an inner surface, a shaft about which the drum can rotate in a forward direction, a locking mechanism for preventing the drum from rotating in a reverse direction but which locking mechanism permits rotation of the drum in the forward direction, the locking mechanism having at least one wedging surface fixed directly or indirectly to the drum, and a locking member interposed between the wedging surface and the shaft, the locking member being rotatable about the shaft when the drum rotates in the forward direction, but when an attempt is made to rotate the drum in the reverse direction the locking member becomes releasably wedged between the wedging surface and the shaft, or a surface fixed to the shaft, thereby preventing the drum from rotating in the reverse direction.
2. The conveyor idler of claim 1 wherein a plurality of wedging surfaces are provided with a locking member being provided between each wedging surface and the shaft.
3. The conveyor idler of claim 2 wherein the plurality of locking members are connected together by connecting means.
4. The conveyor idler of claim 3 wherein the connecting means is a locking housing having circumferentially spaced cages for the locking members.
5. The conveyor idler of claim 4 wherein each locking member is rotatably located within its cage.
6. The conveyor idler of claim 4 wherein each locking member is radially movable within its cage.

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7. The conveyor idler of claim 4 wherein the locking housing consists of two axially spaced end members, with the cages being formed between the end members and between pairs of spaced axially extending walls located between the end members.
8. The conveyor idler of claim 7 wherein the cages extend radially outwardly beyond the circumference of the end members.
9. The conveyor idler of claim 7 including a reinforcing web extending between the end members.
10. The conveyor idler of claim 1 wherein the wedging surface includes a ramp.
11. The conveyor idler of claim 1 wherein the wedging surface forms part of, or is fixed to, an end cap or closure of the sleeve, the end cap or closure being fixed to the drum.
12. The conveyor idler of claim 11 wherein the wedging surface is located within a locking housing receptacle which is fixed to the end cap.
13. The conveyor idler of claim 12 wherein the locking housing receptacle includes a plurality of circumferentially spaced slots which engage a plurality of radially extending webs in the end cap thereby to fix the locking housing receptacle to the end cap.
14. The conveyor idler of claim 1 wherein the wedging surface is located within a locking housing receptacle which is fixed to the inner surface of the sleeve.
15. The conveyor idler of claim 1 wherein the locking member is a ball bearing or roller bearing.

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16. A locking mechanism for a conveyor idler for releasably locking a drum of the conveyor idler from rotating about a shaft in a reverse direction but which permits rotation of the drum in a forward direction about the shaft, the locking mechanism including a connecting means connecting a plurality of circumferentially spaced locking members together which locking members are in use located between wedging surfaces fixed to the drum so that in use when an attempt is made to rotate the drum in the reverse direction, the locking members will simultaneously become releasably wedged between the shaft and the wedging surfaces thereby preventing the drum from being rotated in the reverse direction.
17. The locking mechanism of claim 16 wherein the connecting means includes a cage for each locking member.
18. The locking mechanism of claim 17 wherein each locking member is rotatable within its cage.
19. The locking mechanism of claim 17 wherein each locking member is radially moveable within its cage.
20. The locking mechanism of claim 17 wherein the locking housing consists of two axially spaced end members, with the cages being formed between the end members and between pairs of spaced axially extending walls located between the end members.
21. The locking mechanism of claim 20 wherein the cages extend radially outwardly beyond the circumference of the end members.
22. The locking mechanism of claim 20 including a reinforcing web extending between the end members.
23. The locking mechanism of claim 16 including a receptacle for the locking members and their connecting means, the receptacle

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containing the wedging surfaces and having fixing means for fixing the receptacle directly or indirectly to the drum.

24. The locking mechanism of claim 23 wherein the fixing means comprises a plurality of spaced slots for engaging a plurality of radially extending webs in an end cap of the conveyor idler.
25. An end cap for a conveyor idler including a receptacle for a plurality of circumferentially spaced locking members, the receptacle having a wedging surface for each locking member so that in use a drum of the conveyor idler to which the end cap is fixed can rotate in a forward direction but not in a reverse direction because the locking members become releasably wedged between their wedging surfaces and a shaft of the conveyor idler.
26. The end cap of claim 25 wherein the receptacle is integrally formed with the end cap.
27. The end cap of claim 25 wherein the receptacle is located within a separate housing which is fixed to the end cap.
28. The end cap of claim 27 wherein the separate housing includes a plurality of circumferentially spaced slots which engage a plurality of radially extending webs in the end cap to fix the separate housing to the end cap.